

REMARKS

In the Office Action, claims 25-50 were rejected. By the present response, claims 25, 29 and 46 are amended. Upon entry of the amendments, claims 25-50 will remain pending in the present patent application. Reconsideration and allowance of all pending claims are requested.

Rejections Under 35 U.S.C. §112

Claims 25-50 were rejected under 35 U.S.C. §112, second paragraph in the Office Action. The Examiner posed several rhetorical questions regarding the meaning of certain terms. The objections, the questions and the Applicants' responses are summarized below.

The Examiner alleged that it is not apparent as to which specific "spatial distribution" intended by the recitations of the preambles of claims 25, 29 and 46. Applicants respectfully traverse the rejection. It is believed to be clear to those of ordinary skill in the art that the claimed spatial distribution refers to the distribution of species (in this case, chemical species) in a space. Furthermore, as recited claims 25, 29 and 46, the spatial distribution may be determined for at least one chemical species.

The Examiner also asked the question as to where the chemical species is distributed. As would be clearly understood by those skilled in the art, chemical species may be distributed in any location in which the chemical species are suspected to be present. Various embodiments describing the different locations in which the chemical species may be distributed are presented in the detailed description, paragraphs 26-28.

The Examiner further alleged that it is not clear to what the term "at least a chemical species" applies. Applicants respectfully traverse this rejection because the meaning of the phrase "at least a chemical species" is clear to those of ordinary skill in the art. "At least a chemical species" refers to one or more chemical species. Accordingly,

Applicants note that it would be clear to one of ordinary skill in the art that the present technique allows for detecting a presence, determining a spatial distribution, and quantifying an amount of one or more chemical species.

The Examiner further alleged that is not apparent as to how steps (4) and (5) are performed, since they appear to require control of the process that needs a specific design of the apparatus, which was not disclosed in the specification. Applicants respectfully traverse the rejection, first, because it is unclear as to whether the claims are rejected for being indefinite or with respect to the enablement requirement (35 U.S.C. 112, first paragraph). Applicants request withdrawal of the rejection under 35 U.S.C. 112, second paragraph. Applicants also respectfully traverse the rejection because a person of ordinary skill in the art would clearly understand as to how steps (4) and (5) may be performed in the techniques of the present invention. Moreover, even if the rejection was more appropriately framed under 35 U.S.C. 112, first paragraph, Applicants believe that those skilled in the art would be readily capable of practicing the invention given the description provided without undue experimentation.

The Examiner also asked what was meant by “measuring a time at which said characteristic is detected”, recited in step (7). The Examiner specifically asked: “[w]hat time is meant here? Is it the time that a watch shows?” Applicants note that the time recited is clearly the time at which the characteristic (for example, optical signal) of the product (for example, optically detectable product) is measured. It would be clear to one of ordinary skill in the art that the time may be measured using a watch, clock, electronic circuit, computer or any other time-measuring instrument.

The Examiner also alleged that in step (8) it is not clear, and asked for clarification of the term “spatial distribution of said interaction within said capillary” By the present response, claim 25 has been amended to recite in step (8) “a spatial distribution of said product”. Claims 29 and 46 have been amended to recite in step (8)

“a spatial distribution of said optically detectable product”. The changes are believed to eliminate any potential for misunderstanding the claims that may have previously existed.

The Examiner further alleged that it is not clear how such spatial distribution is obtained. Applicants respectfully traverse the rejection because it would be clear to one of ordinary skill in the art that the spatial distribution of the interaction product within the capillary may be obtained because of the spatial distribution of the chemical species outside the capillary. Applicants note that as recited in the claims, at least one chemical species diffuses into the capillary and interacts with a reagent to produce an interaction product. If a spatial distribution of chemical species exists outside the capillary, then a spatial distribution of the interaction product may be obtained inside the capillary.

Amended claims 25, 29 and 46 and their dependent claims 26-28, 30-45, and 47-50 are believed to be in condition for allowance for the reasons summarized above. Consideration and allowance of the claims are requested.

Rejections Under 35 U.S.C. §103(a)

First Rejection

Claims 25-39, 46, and 48-50 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,434,084 (hereinafter “Burgess”).

Burgess alone does not teach or suggest all the limitations of claims 25-39, 46 and 48-50.

Applicants respectfully traverse this rejection because Burgess does not teach or suggest all of the limitations of the claims 25-39, 46, and 48-50. In order for the prior art to render the claimed invention obvious, all of the elements thereof must be taught or suggested in the prior art. Burgess merely teaches a device and a method for measuring the presence and concentration of analytes. Burgess neither teaches nor suggests *determining a spatial distribution of a chemical species* by measuring a time of the

interaction between the reagent and the chemical species. Furthermore, one of ordinary skill in the art might merely determine that the Burgess reference just teaches the method of detecting the presence and concentration of an analyte. It would not have been obvious to one of ordinary skill in the art to determine *a spatial distribution of chemical species* merely based on the teachings of Burgess. Hence, Burgess neither teaches nor suggests a method of determining spatial distribution of chemical species by employing the techniques of the present invention and the Burgess reference does not render the claims obvious.

Second Rejection

Claims 40-45 and 47 were rejected under 35 U.S.C. §103(a) as being unpatentable over Burgess in combination with various references.

Even if combined, references do not teach or suggest all the limitations of claims 25-39, 46 and 48-50.

As pointed out above, Burgess merely teaches a device and a method for measuring the presence and concentration of analytes. Burgess neither teaches nor suggests a method of *determining a spatial distribution of a chemical species* by measuring a time of the interaction between the reagent and the chemical species. The secondary references do not obviate this deficiency in Burgess. Accordingly, Burgess alone or in combination with the other references neither teaches nor suggests *determining a spatial distribution of a chemical species* by measuring a time of the interaction between the reagent and the chemical species. Since a combination of Burgess and the secondary references does not teach or suggest all of the limitations of claims 25-39, 46 and 48-50, combination of these references do not render the claims obvious.

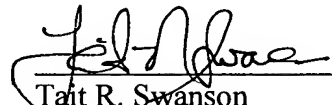
Consequently, claims 25-39, 46 and 48-50 are believed to be in condition for allowance for the reasons summarized above. Consideration and allowance of the claims are requested.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: January 30, 2007



Tait R. Swanson
Reg. No. 48,226p
FLETCHER YODER
P.O. Box 692289
Houston, TX 77269-2289
(281) 970-4545